
SUNNYSIDE THYMES

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“Helping Others Grow”

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Guess Who's Coming to Dinner?

SMG Education Committee - Cathy Bond

Late this past summer I noticed that several of the evergreens at the entrance to my neighborhood were turning brown and a couple were completely dead. I took a hike up to the entrance one evening and found that all nine of the Arborvitae at the entrance had been infested with bagworms – some worse than others. They had accomplished the damage from just a few brown branches to completely decimated plants in just a couple of weeks.



The Bagworm is a perennial insect that gets its name from the silken bag it constructs around itself. There can be up to 1000 eggs in a single bag. The eggs hatch in mid-late May in Southern Indiana and Kentucky. As a caterpillar, in the larval stage, this insect is rarely seen but they peek out of the bag and drag it with them as they consume foliage late evening or after dark. As young larvae, Bagworms can strip evergreens of their needles and devour whole leaves of susceptible plants in a short period of time.

There are three types of bagworms (Order Lepidoptera/Family Psychidae) found North America. The Evergreen Bagworm, the Snailcase Bagworm, and the Grass Bagworm. Only the Evergreen and Grass Bagworms are found in Southern Indiana/Kentucky. The Evergreen bagworms are the most common – not to be confused with “Tent Caterpillars”. The Evergreen Bagworm and the Grass Bagworm are the only species to produce male moths that are capable of flight. They are black, furry, clear-winged moths that have a one inch wingspan. The adult female remains inside her bag until she dies. Females are creamy white and lack wings and legs.

Bagworms pass the winter as eggs inside a spindle-shaped bag found on a variety of trees and

plants. The Evergreen Bagworm prefers deciduous and evergreen trees while the Snailcase Bagworm prefers vegetables, ornamentals, legumes, fruit and other trees. There can be up to 1000 eggs in a single bag. The eggs hatch in mid-May and the tiny larval use silk and plant material to construct a small bag around its hind parts. As they feed and grow, so does the bag.



The bags are made of silk and plant materials like sand, soil and lichen. In early fall, when the bags are one to two inches big, the larvae suspend the bags pointing downward from twigs during which time they transform into the pupae or resting stage over winter before becoming adults. Evergreen Bagworms attach their bags mainly to evergreen trees. Grass Bagworms are attached to grass until they pupate, then it attaches its bag to the sides of fences and buildings. The adult male Evergreen bagworm emerges in early fall when they fly in search of females who are still in their bags. Females produce a scent or pheromone that attracts the males to her. The male inserts his abdomen into a hole in the bottom of the bag to mate. The female lays several hundred eggs in a sack and then drops from her bag and dies.

The eggs hatch in mid-late May in this region when the life cycle starts all over again. Bagworms mature in late August or early September. At this time the bags are about 2 inches long. They stop eating and retreat permanently into bags where they over-winter and can no longer be killed by pesticides since Bagworms must ingest the needles/leaves of treated plants in order to be killed by any insecticide and they are no longer feeding. There is usually one generation per year. Adult male bagworms survive just long enough to mate, due to underdeveloped mouthparts that prevent them from feeding.

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After hatching in the spring, young larvae of Evergreen Bagworms spin strands of silk that can be carried by the wind to other evergreens to feed.

Older larvae strip evergreens of their needles and devour whole leaves of susceptible deciduous. Bagworms prefer juniper, arborvitae, spruce, pine, and cedar but also attack deciduous trees such as willow, apple, maple, elm, birch and cedar trees. Damage is usually noticeable in late July and August. Infestations usually go unnoticed until damage is severe in evergreens because the bags look like pine cones. When abundant, the caterpillars can quickly defoliate plants and kill them.

When infestations of bagworms are detected early, control is much easier. Once population numbers begin to multiply and spread to numerous locations, control is more difficult. If bagworm infestations are not noticed until late summer, not only will their numbers be higher but the bagworms will have aged enough to make them more difficult to kill.

There are several options for bagworm control but in some cases the only option is removal and replacement of trees that are badly damaged.

Sometimes, hand-picking of the bags or cocoons can save your trees and shrubs. If you see a few bagworms on your own plants or shrubs, act quickly. Handpicking of the bags is the only control from fall through mid-Spring. Handpicking must be done before the eggs hatch. After handpicking off the bags, either soak them in soapy water or burn them to kill the insects to prevent more severe dam-

age to your plants. When many small bagworm larvae are present and feeding, an insecticide may be needed to prevent serious damage. The best time to apply an insecticide is while the larvae are still small (less than 1/2-inch long), usually in early June. Most success is found by using a proper insecticide to spray early in the season (before numbers are too high and bagworms have matured).

Insecticides recommended for controlling bagworms include *Bacillus thuringiensis kurstaki* (sold as Dipel or Thuricide), cyfluthrin (Tempo), trichlorfon (Dylox), and spinosad (Conserve). In addition Permethrin, Carbaryl, Bifenthrin, and Acephate products can also be used to kill and control bagworms. However, best results have been obtained by using Talstar One. Talstar is a concentrated product that works at very low rates, with no odor and a label which allows use of product on many plants, shrubs, lawns and buildings.

- PennState College of Agricultural Sciences. <http://ento.psu.edu/extension/factsheets/bagworm>
- Purdue Extension/Department of Entomology. <https://extension.entm.purdue.edu/publications/E-27.pdf>
- University of Illinois Extension. <http://web.extension.illinois.edu/cfiv/homeowners/030628.html>
- University of Kentucky/Agriculture, Food and Environment. <https://entomology.ca.uky.edu/ef440>